

L15 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1998:25569 CAPLUS  
 DN 128:91576  
 ED Entered STN: 16 Jan 1998  
 TI Galvanized steel sheets having mercaptide coatings for high corrosion  
 resistance and lubrication  
 IN Matsusaki, Akira; Yamanaka, Youichiro; Sagiya, Masaru  
 PA Nippon Kokan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C23C022-53  
 ICS C10M105-72; C23C028-00  
 CC 55-6 (Ferrous Metals and Alloys)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10001786	A2	19980106	JP 1996-173050	19960612 <--
PRAI	JP 1996-173050		19960612		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 10001786	ICM	C23C022-53
		ICS	C10M105-72; C23C028-00

AB The title sheets comprise galvanized steel sheets with conversion coatings  
 obtained from solns. containing silicate esters and Al inorg. salts having  
 Al/(Al + Si) mol ratio 0.10-0.75 and overcoatings containing mercaptide  
 compds. from reaction products of thiol compds. with a part of the  
 conversion coatings and optionally thiols. The sheets do not need  
 chromating.

ST lubrication galvanized steel sheet; silicate aluminum thiol coating  
 galvanized steel; mercaptide coating galvanized steel

IT Coating process  
 (conversion; galvanized steel sheets having Al-Si conversion coatings  
 and mercaptide (and thiol) coatings for corrosion resistance and  
 lubrication)

IT Coating materials  
 (galvanized steel sheets having Al-Si conversion coatings and  
 mercaptide (and thiol) coatings for corrosion resistance and  
 lubrication)

IT Galvanized steel  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (galvanized steel sheets having Al-Si conversion coatings and  
 mercaptide (and thiol) coatings for corrosion resistance and  
 lubrication)

IT 638-16-4, 1,3,5-Triazine-2,4,6-trithiol 2885-00-9, 1-Octadecanethiol  
 7446-70-0, Aluminum chloride, processes 11099-06-2, Ethyl silicate  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or  
 engineered material use); PROC (Process); USES (Uses)  
 (galvanized steel sheets having Al-Si conversion coatings and  
 mercaptide (and thiol) coatings for corrosion resistance and  
 lubrication)

RN 638-16-4  
 RN 2885-00-9  
 RN 7446-70-0  
 RN 11099-06-2

L15 ANSWER 2 OF 3 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
 AN 1998-115041 [11] WPIX  
 DNC C1998-038218  
 TI Zinc-based plated steel plate having superior corrosion resistance and

lubricity - comprises surface coating plate with ester silicate and inorganic salt of aluminium, heating and drying..

DC E19 H07 M14

PA (NIKN) NKK CORP

CYC 1

PI JP 10001786 A 19980106 (199811)\* 5 C23C022-53 <--

ADT JP 10001786 A JP 1996-173050 19960612

PRAI JP 1996-173050 19960612

IC ICM C23C022-53

ICS C10M105-72; C23C028-00

AB JP 10001786 A UPAB: 19980316

A solution contains ester silicate and inorganic salt of aluminium having Al/(Al+Si) mol ratio in Si in the ester silicate and Al in the inorganic salt equivalent of 0.10-0.75. The solution is applied on the surface of a zinc-based plated steel plate. The solution is heated and dried to form a chemical conversion-treated film. A film is provided on the chemical conversion-treated film. The film consists of a mercaptide cpd. (a reaction prod. of a thiol cpd. and part of the chemical conversion-treated film), or consists of a thiol cpd. and a mercaptide cpd. (a reaction prod. of the thio cpd. and part of the chemical conversion-treated film.)

ADVANTAGE - The zinc-based plated steel plate has superior corrosion resistance without chromate treatment, and higher lubricity exceeding the lubrication performance of conventional fast drying oil.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: E05-E; E31-P02; H07-A; M14-K

L15 ANSWER 3 OF 3 JAPIO (C) 2005 JPO on STN

AN 1998-001786 JAPIO

TI GALVANIZED STEEL SHEET EXCELLENT IN CORROSION RESISTANCE AND LUBRICITY

IN MATSUZAKI AKIRA; YAMANAKA YOICHIRO; SAGIYAMA MASARU

PA NKK CORP

PI JP 10001786 A 19980106 Heisei

AI JP 1996-173050 (JP08173050 Heisei) 19960612

PRAI JP 1996-173050 19960612

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998

IC ICM C23C022-53

ICS C10M105-72; C23C028-00

AB PROBLEM TO BE SOLVED: To produce a galvanized steel sheet combining excellent corrosion resistance and lubricity.

SOLUTION: This galvanized steel sheet is the one in which the surface of a galvanized steel sheet is applied with chemical conversion coating film formed by applying a solution containing the silicon acid ester and the inorganic

salt of aluminum in the range of 0.10 to 0.75 molar ratio of Al/(Al+Si) expressed in terms of Si in the silicic acid ester and Al in the inorganic salt of aluminum and by drying under heating, and the upper layer is coated with coating composed of a mercaptide compound which is the reaction product between a thick compound and a part of the chemical conversion coating film or with coating film composed of a thiol compound and a mercaptide compound which is the reaction product between the thiol compound and the chemical conversion coating film.

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